CLAIMS

What is claimed is:

1. A stabilizer system for a suspension system, comprising:

first and second piston-cylinder assemblies each comprising a set of variable chambers;

first and second conduits each coupled to a desired chamber from each set of variable chambers;

wherein the first and second piston-cylinder assemblies are configured for coupling to, and load distribution between, first and second movable suspension members.

2. The stabilizer system of claim 1, wherein the set of variable chambers have inversely variable volumes.

3. The stabilizer system of claim 2, wherein each of the first and second piston-cylinder assemblies comprise a closed cylinder, a piston assembly movably disposed in the closed cylinder, and at least first and second chambers of the set of variable chambers disposed on opposite sides of the piston assembly.

4. The stabilizer system of claim 3, wherein the desired chambers comprise inverse pairs of the first and second chambers from the sets of variable chambers.

5. The stabilizer system of claim 3, wherein at least one of the first and second chambers comprises a linkage member having first and second ends, the first end coupled to the piston assembly and the second end extending through a wall of the closed cylinder for coupling to a desired one of the first and second movable suspension members.

6. The stabilizer system of claim 3, wherein the piston assembly for at least one of the first and second piston-cylinder assemblies comprises first and second pistons disposed about an intermediate chamber.

7. The stabilizer system of claim 6, wherein the intermediate chamber is configured to compensate for volume differentials between first and second pairs of the desired chambers coupled via the first and second conduits, respectively.

8. The stabilizer system of claim 6, wherein the intermediate chamber comprises a spring assembly.

9. The stabilizer system of claim 6, wherein at least one of the first and second pistons is fixed to a linkage member extending through a wall of the closed cylinder for coupling to a desired one of the first and second movable suspension members.

10. The stabilizer system of claim 2, wherein the first and second piston-cylinder assemblies comprise a plurality of closed cylinders each comprising a piston cylinder movably disposed therein and first and second chambers of the set of variable chambers disposed on opposite sides of the piston assembly.

11. The stabilizer system of claim 10, wherein the desired chambers for each of the first and second conduits comprise a desired pair of the first chambers.

12. The stabilizer system of claim 11, wherein each of the first and second conduits comprises a variable volume chamber assembly.

13 The stabilizer system of claim 12, wherein the variable volume chamber assembly comprises a diaphragm.

14. The stabilizer system of claim 12, wherein the variable volume chamber assembly comprises a spring-loaded piston-cylinder assembly.

15. The stabilizer system of claim 1, wherein the set of variable chambers comprise a fluid.

16. The stabilizer system of claim 1, wherein the set of variable chambers comprise a gas.

17. A vehicle suspension stabilizer, comprising:

a plurality of piston-cylinder assemblies comprising variable chambers and linkage members configured for coupling to movable suspension members, wherein multiple sets of the variable chambers are fluidly coupled to distribute forces between the movable suspension members.

18. The vehicle suspension stabilizer of claim 17, wherein each of the plurality of piston-cylinder assemblies comprises a closed cylinder, a piston assembly movably disposed in the closed cylinder, and first and second chambers of the variable chambers disposed on opposite sides of the piston assembly.

19. The vehicle suspension stabilizer of claim 18, wherein the multiple sets of the variable chambers comprise a first coupled set of the first chambers from a first desired set from the plurality of piston-cylinder assemblies.

20. The vehicle suspension stabilizer of claim 19, wherein the multiple sets of the variable chambers comprise a second coupled set of the first chambers from a second desired set from the plurality of piston-cylinder assemblies.

21. The vehicle suspension stabilizer of claim 18, wherein the multiple sets of the variable chambers comprise a first inversely coupled pair of the first and second chambers from a first desired pair from the plurality of piston-cylinder assemblies.

22. The vehicle suspension stabilizer of claim 21, wherein the multiple sets of the variable chambers comprise a second inversely coupled pair of the first and second chambers from a second desired pair from the plurality of piston-cylinder assemblies.

23. The vehicle suspension stabilizer of claim 21, wherein the multiple sets of the variable chambers comprise a second inversely coupled pair of the second and first chambers from the first desired pair.

24. The vehicle suspension stabilizer of claim 18, wherein the piston assembly for at least one of the plurality of piston-cylinder assemblies comprises at least two pistons disposed about an intermediate chamber.

25. The vehicle suspension stabilizer of claim 24, wherein the intermediate chamber comprises a resistance mechanism.

26. The vehicle suspension stabilizer of claim 25, wherein the resistance mechanism comprises a spring assembly.

27. The vehicle suspension stabilizer of claim 25, wherein the resistance mechanism comprises a fluid.

28. The vehicle suspension stabilizer of claim 17, comprising a resistance mechanism disposed between at least one of the multiple sets.

29. The vehicle suspension stabilizer of claim 28, wherein the resistance mechanism comprises a diaphragm.

30. The vehicle suspension stabilizer of claim 28, wherein the resistance mechanism comprises a spring-loaded piston-cylinder assembly.

31. A method for stabilizing a suspension system, comprising:

mechanically coupling a plurality of piston-cylinder assemblies to a plurality of movable suspension members; and

fluidly intercoupling chambers from the plurality of piston-cylinder assemblies.

32. The method of claim 31, wherein mechanically coupling the plurality of piston-cylinder assemblies comprises linking piston assemblies movably disposed in each of the plurality of piston-cylinder assemblies to the plurality of movable suspension members, the plurality of piston-cylinder assemblies comprising first and second chambers disposed about the piston assembly.

33. The method of claim 32, wherein mechanically coupling the plurality of piston-cylinder assemblies comprises positioning the plurality of piston-cylinder assemblies to facilitate interaction between the plurality of movable suspension members and the piston assemblies.

34. The method of claim 33, wherein fluidly intercoupling chambers comprises coupling a first conduit to a first chamber pair from a first pair of piston-cylinder assemblies from the plurality of piston-cylinder assemblies.

35. The method of claim 34, wherein coupling the first conduit to the first chamber pair comprises intercoupling the first chambers from the first pair.

36. The method of claim 35, wherein fluidly intercoupling chambers comprises coupling a second conduit to a second chamber pair from a second pair of piston-cylinder assemblies from the plurality of piston-cylinder assemblies.

37. The method of claim 34, wherein coupling the first conduit to the first chamber pair comprises intercoupling first and second chambers from the first pair.

38. The method of claim 37, wherein fluidly intercoupling chambers comprises coupling a second conduit to a second chamber pair of the first and second chambers from the first pair, the first and second chamber pairs comprising inverse pairs of the first and second chambers from the first pair.

39. The method of claim 31, comprising distributing a force, which is exerted on at least one member of the plurality of movable suspension members, between at least two members of the plurality of movable suspension members.

40. The method of claim 39, wherein distributing the force comprises fluidly transmitting the force through a desired stabilizer set of piston-cylinder assemblies of the plurality of piston-cylinder assemblies coupled to the at least two members.

41. The method of claim 40, wherein fluidly transmitting the force comprises facilitating balanced motion of the at least two members.

42. The method of claim 41, wherein facilitating balanced motion of the at least two members comprises utilizing the desired stabilizer set to provide multiple cross-compensation between the at least two members.

43. A method for stabilizing a vehicle, comprising:

hydraulically balancing orientations of a plurality of suspension members in response to a load exerted on a first member of the plurality of suspension members.

44. The method of claim 43, wherein hydraulically balancing orientations comprises hydraulically moving a second member of the plurality of suspension members in response to movement of the first member caused by the load.

45. The method of claim 44, wherein hydraulically balancing orientations comprises hydraulically moving the first member in response to movement of the second member.

46. The method of claim 45, wherein hydraulically balancing orientations comprises distributing the load between the first and second members.

47. The method of claim 46, wherein distributing the load comprises distributing a lateral load between passenger and driver sides of the vehicle.

48. The method of claim 46, wherein distributing the load comprises distributing a longitudinal load between forward and rear portions of the vehicle.

49. A method of forming a suspension stabilizer for a vehicle, comprising:

providing a piston-cylinder assembly comprising multiple chambers disposed about a piston assembly; and

intercoupling chambers of a plurality of the piston-cylinder assemblies to provide crosswise stabilization between vehicle suspension members connectable to the plurality of piston-cylinder assemblies.

50. The method of claim 49, wherein providing the piston-cylinder assembly comprises forming first and second closed chambers about the piston assembly and extending a linkage from the piston assembly through and outwardly from an outer wall of the piston-cylinder assembly.

51. The method of claim 50, wherein providing the piston-cylinder assembly comprises providing an intermediate chamber between first and second pistons of the piston assembly to compensate for volume differentials.

52. The method of claim 51, wherein providing the intermediate chamber comprises disposing a resistance mechanism between the first and second pistons.

53. The method of claim 49, wherein intercoupling chambers comprises coupling a first conduit to first chambers from a first pair of piston-cylinder assemblies from the plurality of piston-cylinder assemblies.

54. The method of claim 53, wherein intercoupling chambers comprises coupling a second conduit to first chambers from a second pair of piston-cylinder assemblies from the plurality of piston-cylinder assemblies, wherein each of the first and second pairs are configured for hydraulic interaction with first and second members of the vehicle suspension members.

55. The method of claim 49, wherein intercoupling chambers comprises coupling a first conduit to first and second chambers from a first pair of piston-cylinder assemblies from the plurality of piston-cylinder assemblies.

56. The method of claim 55, wherein intercoupling chambers comprises coupling a second conduit to the first and second chambers from the first pair, the first and second conduits coupling inverse pairs of the first and second chambers from the first pair.